

CLAIMS

1. (Currently Amended) A method of forming an extruded thin-walled article comprising:
  - providing a polymeric binder system comprising a substantially homogeneous solution of a thermoplastic elastomer polymeric binder and an organic solvent which is in liquid form at room temperature;
  - adding a ceramic or metal powder to said polymeric binder system to form a mixture;
  - evaporating said organic solvent from said mixture; and
  - extruding the remaining mixture from a die to form a thin-walled green article.
2. (Original) The method of claim 1 further including heating said extruded thin-walled green article to burn-off said binder and to sinter the article.
3. (Original) The method of claim 1 wherein said polymeric binder comprises a thermoplastic block copolymer, a first thermoplastic polymer, a second thermoplastic polymer different from said first thermoplastic polymer, and a plasticizer.
4. (Original) The method of claim 3 wherein said thermoplastic block copolymer comprises a copolymer of styrene and butadiene.
5. (Original) The method of claim 3 wherein said first thermoplastic polymer comprises polystyrene.
6. (Original) The method of claim 3 wherein said second thermoplastic polymer comprises polyindene.
7. (Original) The method of claim 3 wherein said polymeric binder further includes an antioxidant.

8. (Original) The method of claim 3 wherein said plasticizer comprises at least one oil and at least one wax.

9. (Original) The method of claim 1 wherein said solvent is toluene or tetrahydrofuran.

10. (Original) The method of claim 1 wherein said solvent is selected from cyclohexane, methylcyclohexane, benzene, ethylbenzene, styrene, lower chlorinated aliphatic hydrocarbons, tetrahydrofurfuryl alcohol, phenol/acetone, dimethyltetrahydrofuran, dioxane, methyl ethyl ketone, diisopropylketone, cyclohexanone, ethyl acetate, butyl acetate, n-butyl phthalate, carbon disulfide, and tributyl phosphate.

11. (Original) The method of claim 1 wherein said remaining mixture is extruded at a temperature of between about 100 to 135°C.

12. (Original) The method of claim 1 wherein said ceramic powder comprises yttria-stabilized zirconia.

13. (Previously Amended) The method of claim 1 wherein said metal powder comprises nickel oxide plus yttria-stabilized zirconia.

Claims 14-27 (Withdrawn)

28. (New) A method of forming an extruded thin-walled article comprising:

    providing a polymeric binder system comprising a substantially homogeneous solution of a thermoplastic elastomer polymeric binder and an organic solvent;

    adding a ceramic or metal powder to said polymeric binder system to form a mixture; wherein said binder system and powder are mixed at a temperature of about 50°C;

    evaporating said organic solvent from said mixture; and

    extruding the remaining mixture from a die to form a thin-walled green article.

29. (New) A method of forming an extruded thin-walled article comprising:

    providing a polymeric binder system comprising a substantially homogeneous solution of a thermoplastic elastomer polymeric binder and an organic solvent,

    adding a ceramic or metal powder to said polymeric binder system to form a mixture; wherein said organic solvent reduces the viscosity of said binder system to allow mixing of said binder system and powder at temperatures below 100°C;

    evaporating said organic solvent from said mixture; and

    extruding the remaining mixture from a die to form a thin-walled green article.